Clinical assessment of early gestational age

To the Editor: The Choice of Termination of Pregnancy (CTOP) Act No. 92 of 1996[1] gives women the choice to terminate an unwanted / unplanned pregnancy. Up to 12 weeks' gestation this is a choice; after 12 weeks (up to 20 weeks) a reason (e.g. socioeconomic) is required. First-trimester abortions can be performed in primary health care (PHC) facilities by registered midwives who have undergone the mandatory training. Second-trimester TOPs must be performed by medical practitioners in designated hospitals, public or private.

According to the Guidelines for Maternity Care in South Africa,[2] the date of the last menstrual period is considered valid if the woman is sure of her dates and palpation is compatible with the given dates; the symphysis-fundus height is of little value before 20 weeks, and up to 24 weeks' gestation ultrasound should replace all other methods.[2] In Theron's view,[3] however, abdominal palpation is the most accurate method of assessment in women who are between 13 and 24 weeks pregnant. This leaves us uncertain about the clinical dating of first-trimester pregnancy. In our (unpublished) experience with 2 500 TOP seekers, only 70% gave a precise date of the last menstrual period; of these, only 36% of the given dates tallied with the sonographic estimate of gestational age (SEGA) ± 1 week. In other words, menstrual history was poorly reliable in establishing the gestational age. Furthermore, the clinical estimate of the duration of pregnancy by abdominal palpation tallied with the SEGA± 1 week in only 28% of the patients. Half of the pregnancies were in the first trimester.

Sonography is the gold standard to date early pregnancy[2] but is hardly available, if at all, in PHC facilities. Moreover, routine pregnancy tests available in the public sector are qualitative and not quantitative. The CTOPAct therefore poses a double challenge: to diagnose pregnancy correctly (to avoid unnecessary attempts to terminate a non-existing pregnancy), and to estimate the duration of pregnancy correctly without the help of sonography (to abide by the law distinguishing between first- and second-trimester abortion). In an attempt to meet the challenge and in view of the shortcomings of menstrual history and abdominal palpation, the 'fingerbreadth' method was investigated. This was inspired by Crichton's method for establishing the level of the presenting pole in terms of the number of fingerbreadths above the pelvic brim.[4] In brief, the uterine fundus was palpated abdominally and the number of fingerbreadths between the symphysis pubis and the fundus was counted and recorded in 568 pregnant women. The patients were not requested to void so that the sonographic examination could follow immediately. The condition of the bladder (full or empty), as evidenced during sonography, was recorded; the bladder was full in 48% of cases. Since the bladder is not always totally full (as opposed to totally empty), half-full bladders were counted as full.

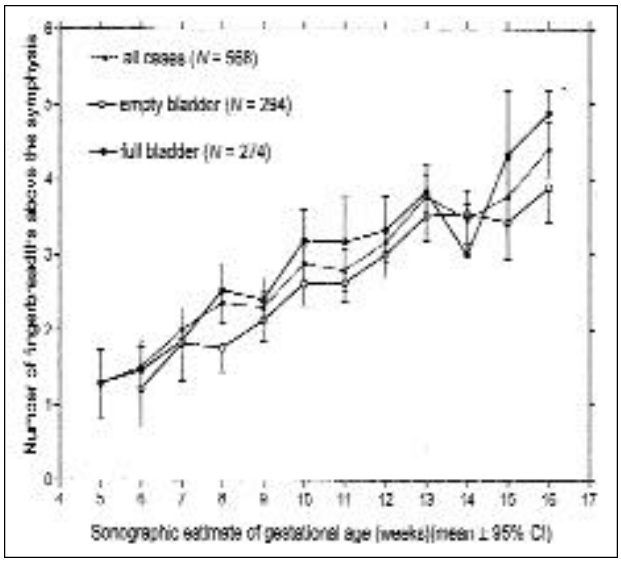

Fig. 1. Correlation between the number of fingerbreadths above the symphysis: with empty or full bladder.

Fig. 1 illustrates the correlation between the number of fingerbreadths above the symphysis and the SEGA. It shows that there was no significant difference related to the fullness or emptiness of the bladder. Fig. 2 shows the simple regression curves for the number of fingerbreadths above the symphysis against the SEGA. The two regression lines (empty or full bladder) overlap, confirming that the condition of the bladder did not significantly affect the clinical estimate of gestational age. Of note, however, is the fact that 53 false-positives (9.3%) were encountered with one fingerbreadth (N = 50) or two

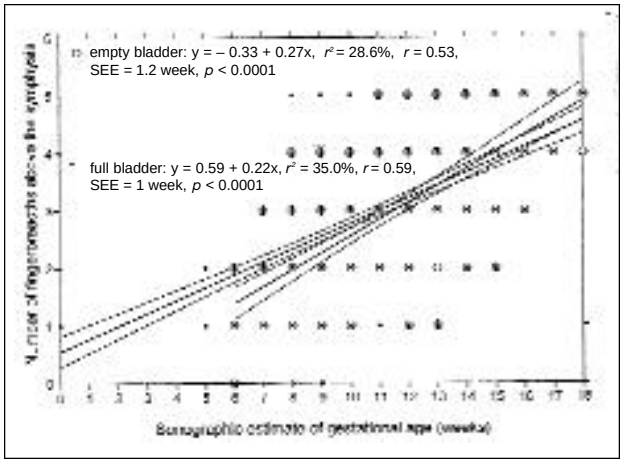

Fig. 2. Scatter plot of the number of fingerbreadths above the symphysis against the sonographic estimate of gestational age.

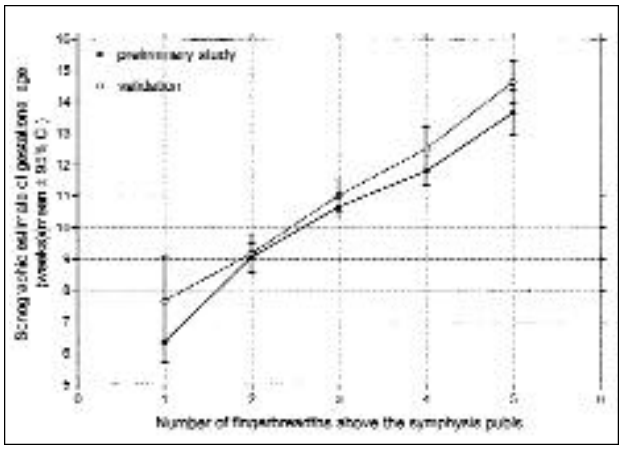

Fig. 3. Estimation of early gestational age by the fingerbreadths method.

fingerbreadths (N = 3) above the symphysis; all were due to a full bladder.

In view of these findings, the curve shown in Fig. 3 was established. Regardless of the condition of the bladder, it was found that the number of fingerbreadths above the symphysis allows the clinical estimation of the duration of pregnancy as follows: one fingerbreadth = 6 - 7 weeks, two = 9 - 10, three = 10 - 11, four = 11 - 12, and five = 13 - 14 weeks.

The preliminary results were validated in a prospective series of 353 women. The only difference was that two fingerbreadths tallied with a gestational age of 8 - 9 weeks (instead of 9 - 10 weeks). There were 18 false-negatives (5.1%) and 31 false-positives (8.8%). The false-negatives occurred at a mean gestational age of 7.9 weeks (95% confidence interval (CI): 7.1, 8.7). The sensitivity was 93.2% and the specificity 65.6%. The positive predictive value was 88.8% and the negative predictive value 76.6%. Because some women with one or two fingerbreadths and a full bladder were found to be false-positive, it is recommended that these clients be asked to void, and that the clinical examination be repeated.

For practical purposes, a symphysis-fundus distance of more than three fingerbreadths suggests a pregnancy of ≥ 12 weeks and the patient should be referred to hospital for TOP, if that is the case. The method might be useful in PHC settings with no sonographic facilities to improve proficiency of clinical diagnosis of pregnancy and determination of early gestational age.

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Medical students' experiences of the autopsy

To the Editor: The autopsy is an important tool for medical training, research and audit. Unfortunately the autopsy rate has declined drastically worldwide over the last half century.[1] For example, in Sweden the rate fell from 46% in 1969 to 31% in 1993,[2] in North America from 50% in 1950 to as low as 7% in some hospitals in 1995,[1] and in France from 15% in 1988 to 4% in 1997.[3] Some students and medical practitioners consider the autopsy to be of little value.[4,5]

The value of the autopsy extends beyond ascertainment of the cause of death to quality control in medical practice, research and education, and the provision of epidemiological medical data. Many deaths occur without physicians knowing the cause. In 24 – 30% of perinatal deaths, autopsy was the sole means of establishing the diagnosis.[6-8] In cases where the diagnosis is supposedly ascertained by means of modern investigative technologies, studies have revealed that there is a relatively high rate of misdiagnosis. Seven to thirteen per cent of autopsies revealed a clinically missed major diagnosis that might have led to a change in therapy.[5,6,9,10] Lowry expressed this well when he said that 'Failure to perform autopsies means some MD's are "walking in a fog of misplaced optimism"'.[1]

The purpose of this study was to assess the experience of medical students with regard to autopsy.

Data were collected by means of a self-administered questionnaire (validated previously),[11] which covered the objectives of the autopsy and students' experience of autopsies during medical training. Informed consent was obtained and the study approved by the Ethics Committee of the Medical University of Southern Africa (MEDUNSA).

Of 254 final year MB ChB students at MEDUNSAin 1998, 239 received questionnaires and 164 (65%) were available for the study. Seven students did not know what the objectives of autopsy were and 2 believed that the autopsy has little value today. The remaining responses were: 123 students (75%) considered the ascertainment of the cause of death to be the principal objective of autopsy, 58 (35%) indicated medical